



SUBSTITUTE SPECIFICATION – CLEAN COPY

TITLE OF THE INVENTION:

PARALLEL FLUID PROCESSING SYSTEMS AND METHODS

STATEMENT OF RELATED APPLICATION(S)

5 [0001] This application claims benefit of U.S. provisional patent application serial no. 60/461,846 filed April 10, 2003.

FIELD OF THE INVENTION

[0002] The present invention relates to fluid processing, such as may be used for synthesizing and/or analyzing various chemical or biological substances.

10 **BACKGROUND OF THE INVENTION**

[0003] Recent advances in various scientific and industrial fields have dramatically increased the desirability of synthesizing new chemical and biological substances, and have similarly increased the need to analyze these substances, e.g., to identify their active components, verify their stability, and optimize processes for their manufacture. In an effort to accelerate these capabilities, researchers have sought to introduce a higher degree of automation to synthetic and analytical processes as well as increase the number of processes performed in parallel. Most of these processes are performed with fluids (e.g., liquids and/or gases).

[0004] To increase the efficiency of fluid processing performed in parallel, it would be desirable to reduce the number of expensive fluid supply components, such as pumps, valves, regulators, and pulse dampers. Providing common fluid supply components and fluidic splitting networks for supplying common fluid(s) to multiple process regions would appear to address such efficiency concerns. If common fluid supply components are used for parallel fluid processing systems, however, another concern is ensuring that each process region is subject to reproducible process conditions. For example, if it is desired to evenly split common supplies of solvents or reagents to multiple process regions, it may be difficult to ensure that each process region receives a substantially equal flow. The problem may be exacerbated by the presence of solid materials, such as catalysts or separation media, e.g., due to variations in solid particle types, sizes, and/or packing density. Additional concerns may arise if it is desired